UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,994	12/30/2000	Shuvranshu Pokhariyal	42390P10364	9840

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EXAMINER
JACKSON, JAKIEDA R

ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/752,994	POKHARIYAL ET AL.
	Examiner	Art Unit	
	Jakieda R. Jackson	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-2 and 4-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

February 21, 2006 has been entered.

Response to Arguments

2.   Regarding independent claims 1, 6, 9, 12, 15 and 18 applicants argue that

Schmid and Beutnagel, either taken alone or in combination do not teach or suggest

assigning each of the generic and non-generic words a confidence level based on a set

of rules followed by the speech engine and wherein the generic and non-generic words

that are part of a particular application are assigned a higher confidence level than the

generic and non-generic words that are not part of the particular application. Applicant's

arguments have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1-2 and 4-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al. (U.S. Publication No. 2002/0143529), hereinafter referenced as Schmid in view of Beutnagel (USPN 6,708,885) and in further view of Epstein (USPN 6,983,239).

Regarding **claims 1, 9 and 15**, Schmid discloses a method, machine-readable medium, apparatus and system, hereinafter referenced as a "system" comprising:

creating a rule-based grammar (column 5, paragraph 0070) having a wildcard identifier in place of a predefined category of words (wildcard transition; figure 3, element 326 with column 1, paragraph 0003);

defining rules (rule interpreter; figure 2, element 214) to produce artificial combinations of unique sounds in a language (phoneme; column 6, paragraph 0088 with 0084), where each artificial combination represents a pronunciation of the words (paragraph 0088) in the predefined category (set of selected phrases; column 1, paragraph 0003), and represents a generic word (dictation grammar) that is defined in a speech engine's vocabulary database (column 1, paragraph 0008 with column 3, paragraph 0034);

generating a set of artificial combinations of unique sounds (phoneme; column 6, paragraph 0088 with paragraph 0092 and 0095) by substituting the wildcard identifier with the rules (column 1, paragraph 0003); and

in response to human speech specifying a wildcard word, determining a number

of potential words spoken by the user by finding the generic words (dictation grammar;

column 1, paragraph 0008) and non-generic words (optional word "please"; column 3,

paragraph 0041) that phonetically match the wildcard word (column 7, paragraph

0095), and then assigning each of the words a confidence level (plus or minus with

high and low confidence level; column 7, paragraph 0095), but lacks wherein the non-

generic words are not a part of the rule-based grammar, assigning each of the generic

and non-generic words confidence level based on a set of rules followed by the speech

engine, removing the generic words from the set of potential words spoken by the user,

and selecting a remaining word from the set of potential words spoken by the user

having a highest confidence level, but does not specifically teach and wherein the

generic and non-generic words that are a part of a particular application are assigned a

higher confidence level than the generic and non-generic words that are not part of the

particular application.

Beutnagel discloses speech synthesis and recognition systems for determining a

set of potential words spoken by a user (known words; column 7, lines 24-26) by

finding the generic (figure 1, element 105; column 2, lines 66-67 with column 4, lines

27-47 and column 5, line 66 – column 6, line 3) and non-generic words (figure 1,

element 110 with column 7, lines 24-26) that phonetically match (match the individual

phonemes; column 5, lines 57-66) the wildcard (word at hand; column 4, lines 52-63

with will not know; column 5, lines 32-56) wherein the non-generic words are not a part

of the rule-based grammar (figure 1, element 110 with column 2, lines 61-64),

assigning each of the generic and non-generic words confidence level based on a set

of rules followed by the speech engine (column 5, lines 5-12), removing the generic

words from the set of potential words spoken by the user (return the "N" most likely

members of the recognition grammar; column 6, lines 20-30), and selecting a

remaining non-generic word from the set of potential words spoken by the user having

a highest confidence level (report the member with the highest overall probability;

column 5, line 57 – column 6, line 3), to provide an improved synthesis and recognition

system that automatically determines the phonetic transcription that corresponds to the

spoken word.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Schmid's system wherein the non-generic

words are not a part of the rule-based grammar, assigning each of the generic and

non-generic words confidence level based on a set of rules followed by the speech

engine, removing the generic words from the set of potential words spoken by the user,

and selecting a remaining word from the set of potential words spoken by the user

having a highest confidence level, to prevent end-users from wasting time and energy

from constructing alternative pronunciations and making the mistake of not knowing all

the proper phonetic transcriptions (column 1, lines 21-37), by providing an improved

synthesis and recognition system that automatically determines the phonetic

transcription that corresponds to the spoken word (column 2, lines 12-23).

Schmid in view of Beutnagel teaches a system for specifying arbitrary words in

rule-based grammars, but does not specifically teach wherein the generic and non-

generic words that are a part of a particular application are assigned a higher

confidence level than the generic and non-generic words that are not part of the

particular application.

Epstein teach a method and apparatus for embedding grammars in a natural

language understanding statistical parser wherein the generic and non-generic words

(substrings) that are a part of a particular application (particular CFG) are assigned a

higher confidence level (probability value greater) than the generic and non-generic

words that are not part of the particular application (column 11, lines 7-31), to provide a

probability distribution for possible pare trees at runtime.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Schmid in view of Beutnagel system, as taught

by Epstein, wherein the generic and non-generic words that are a part of a particular

application are assigned a higher confidence level than the generic and non-generic

words that are not part of the particular application, to return substrings corresponding

to rules having a probability value greater than a threshold probability (column 11, lines

7-31).

Regarding **claims 2, 10, 13, 16 and 20**, Schmid discloses a system wherein the

rule-based grammar comprises a context-free grammar (CFG) (context-free grammar

engine; figure 2, element 202).

Regarding **claims 4, 8, 11, 14, 17 and 19**, Schmid discloses a system wherein a

unique sound in a language comprises a phoneme (column 6, paragraph 0088 with

column 7, paragraph 0092).

Regarding **claims 5 and 21**, Schmid discloses the system wherein said

generating a set of artificial combinations of unique sounds (phonemes; column 6,

paragraph 0088 with column 7, paragraph 0092) by substituting (substitutes) the

wildcard identifier (entire state diagram) with the rules (column 4, paragraph 0045 with

column 5, paragraph 0068) comprises converting the wildcard rule-based grammar into

a standard rule-based grammar (figure 3 with transition from state to state through

rules; column 9, paragraph 0129).

Regarding **claim 6**, Schmid discloses a method comprising:

specifying a wildcard context-free grammar (CFG)(figure 2, element 202), which

includes a wildcard identifier in place of a predefined category of words (a set of

selected phrases; column 1, paragraph 0003), each of which are defined in the speech

engine's vocabulary database (column 3, paragraph 0034);

specifying a set of rules (setting the PRON) that define artificial combinations of

unique sounds in a language (phoneme), where each artificial combination represents

a pronunciation of the words (pronunciation of words) in the predefined category

(column 6, paragraph 0088 with column 7, paragraph 0090-0092 and column 1,

paragraph 003), and corresponds to a generic word that is defined in a speech

engine's vocabulary database (column 3, paragraph 0034);

converting the wildcard CFG file into a recognized CFG grammar file (figure 3) by

generating a set of artificial combinations of unique sounds based on the rules

(phonemes; column 6, paragraph 0088 with paragraph 0092); and in response to

human speech having one or more spoken units (speech recognition engine; figure 2,

element 204), generating a results object (results produced) having a number of generic words (given number; column 9, paragraph 0117) corresponding to artificial combinations appropriate to a given spoken unit (phoneme), and having a number of non-generic words (optional words; column 3, paragraph 0041) in the speech engine's vocabulary database appropriate to a given spoken unit (column 3, paragraph 0034), each generic word and non-generic word having an associated confidence level (column 7, paragraph 0095), but lacks wherein the non-generic words are not a part of the rule-based grammar, assigning each of the generic and non-generic words confidence level based on a set of rules followed by the speech engine, removing the generic words from the set of potential words spoken by the user, and selecting a remaining word from the set of potential words spoken by the user having a highest confidence level.

Beutnagel discloses speech synthesis and recognition systems for determining a set of potential words spoken by a user (known words; column 7, lines 24-26) by finding the generic (figure 1, element 105; column 2, lines 66-67 with column 4, lines 27-47 and column 5, line 66 – column 6, line 3) and non-generic words (figure 1, element 110 with column 7, lines 24-26) that phonetically match (match the individual phonemes; column 5, lines 57-66) the wildcard (word at hand; column 4, lines 52-63 with will not know; column 5, lines 32-56) wherein the non-generic words are not a part of the rule-based grammar (figure 1, element 110 with column 2, lines 61-64), assigning each of the generic and non-generic words confidence level based on a set of rules followed by the speech engine (column 5, lines 5-12), removing the generic

words from the set of potential words spoken by the user (return the "N" most likely

members of the recognition grammar; column 6, lines 20-30), and selecting a

remaining non-generic word from the set of potential words spoken by the user having

a highest confidence level (report the member with the highest overall probability;

column 5, line 57 – column 6, line 3), to provide an improved synthesis and recognition

system that automatically determines the phonetic transcription that corresponds to the

spoken word.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Schmid's system wherein the non-generic

words are not a part of the rule-based grammar, assigning each of the generic and

non-generic words confidence level based on a set of rules followed by the speech

engine, removing the generic words from the set of potential words spoken by the user,

and selecting a remaining word from the set of potential words spoken by the user

having a highest confidence level, to prevent end-users from wasting time and energy

from constructing alternative pronunciations and making the mistake of not knowing all

the proper phonetic transcriptions (column 1, lines 21-37), by providing an improved

synthesis and recognition system that automatically determines the phonetic

transcription that corresponds to the spoken word (column 2, lines 12-23).

Schmid in view of Beutnagel teaches a system for specifying arbitrary words in

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(substrings) that are a part of a particular application (particular CFG) are assigned a

higher confidence level (probability value greater) than the generic and non-generic

words that are not part of the particular application (column 11, lines 7-31), to provide a

probability distribution for possible pare trees at runtime.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Schmid in view of Beutnagel system, as taught

by Epstein, wherein the generic and non-generic words that are a part of a particular

application are assigned a higher confidence level than the generic and non-generic

words that are not part of the particular application, to return substrings corresponding

to rules having a probability value greater than a threshold probability (column 11, lines

7-31).

Regarding **claim 7**, Schmid discloses a system comprising querying the results

object for having the highest confidence level in the speech engine's vocabulary

database (highest confidence level; column 7, paragraph 0095).

Regarding **claim 12**, it is interpreted and rejected for the same reasons as set

forth in claim 1. In addition, Schmid discloses an apparatus comprising:

at least one processor (processing unit; figure 1, element 120); and

a machine-readable medium (computer readable instructions/media) having

instructions encoded thereon, which when executed by the processor, are capable of

directing the processor (column 2, paragraph 0026 and 0027).

Regarding **claim 18**, it is interpreted and rejected for the same reasons as set

forth in claim 1. In addition, Schmid discloses a system comprising:

a conversion module (figure 3) to accept a wildcard rule-based grammar file as

input, and to convert the wildcard rule-based grammar file to a set of artificial

combinations of unique sounds in a language (phoneme; column 6, paragraph 0088

with column 7, paragraph 0092);

a speech engine (figure 2, element 204) to accept human speech having a

wildcard word as input (column 8, paragraph 0112), and to determine a number of

potential words matching the wildcard word (column 7, paragraph 0095), the potential

words comprising a number of generic words (dictation grammar; column 1, paragraph

0008) corresponding to the artificial combinations of unique sounds in a language

(phoneme; column 6, paragraph 0088 with column 7, paragraph 0092), and a number

of non-generic words (optional words; column 3, paragraph 0041); and

a speech adapter (network interface; figure 1, element 170 with column 3,

paragraph 0033) to interact with the speech engine by querying the speech engine for

potential words matching the wildcard word (represent phrases), and by returning the

word most likely to match (determines the likelihood) the wildcard word spoken by the

user (column 3, paragraph 0034).

Conclusion

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R. Jackson whose telephone number is 571.272.7619. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571.272.7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRJ
3/27/06

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